

HATTERS,

English and American

**SILK DRESS HATS,
OPERA CRUSH HATS,
FELT and CLOTH HATS
In Choice Shades.**



FURRIERS.

**LEATHER HAT CASES,
CANES, UMBRELLAS,
and WALKING STICKS**

Variety Unsurpassed

For *STUDENTS' WEAR.*

Agents for Heath's, White's, and Lincoln, Bennett & Co.'s **ENGLISH HATS.**

COLLINS & FAIRBANKS, Successors to
D. P. ILSLEY & CO.,

No. 381 Washington Street, Opposite Franklin, Boston.

JAMES NOTMAN,

Photographer to Class of '85, Institute of Technology, and Harvard '80, '81, and '85.

Boston Studio, 99 BOYLSTON ST., Opp. Public Garden.

Harvard Studio, 400 HARVARD STREET, CAMBRIDGE.

RICHARD L. GAY COMPANY,

(RICHARD L. GAY, late of WARD & GAY.)

Will be pleased to see you at their

NEW RETAIL STORE,

332 Washington Street, - - - BOSTON,

Next Store South Transcript Building,

Where they offer the same complete assortment of goods with all the variety and special features of the old firm of WARD & GAY.

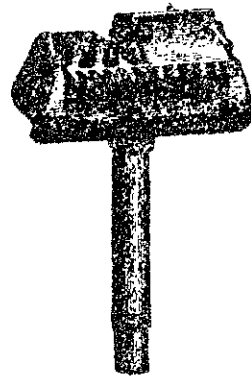
Paper by the Pound, Visiting Cards, Monogram, Crest, and Initial Engraving and Stamping.

They will soon open their Christmas Cards and Souvenirs, which will exceed anything heretofore shown.

25¢ Their new sample book of Papers and Envelopes sent upon application.

THE STAR SAFETY RAZOR

SELLING AGENTS,
Dane, Stoddard & Kendall,
Successors to Bradford & Anthony,
374 Washington St., Boston
Opposite Bromfield.



CUTLERY,
FANCY HARDWARE,
AND
FISHING TACKLE.

DEALERS IN

Requires no practice. Every man his own barber.

DERBYS. ——— SILK HATS.

BENT & BUSH,

Military Furnishers to the Institute,

387 WASHINGTON ST., BOSTON.

———— FURS. ———

• THE •

Massachusetts Institute of Technology,

BOYLSTON STREET, BOSTON.

FRANCIS A. WALKER, President.

THIS school is devoted to the teaching of science, as applied to the various engineering professions; viz., civil, mechanical, mining, and electrical engineering, as well as to architecture, chemistry, metallurgy, physics, and natural history.

Besides the above distinctly professional courses, the Institute offers scientific courses of a less technical character, designed to give students a preparation for business callings. A four years' course in biology, chemistry, and physics has been established, as preparatory to the professional study of medicine.

Modern languages are taught, so far as is needed for the ready and accurate reading of scientific works and periodicals, and may be further pursued as a means of general training.

The constitutional and political history of England and the United States, political economy, and international law are taught, in a measure, to the students of all regular courses, and may be further pursued as optional studies.

Applicants for admission to the Institute are examined in English grammar, geography, French, arithmetic, algebra, modern history, and geometry. A fuller statement of the requirements for admission will be found in the catalogue, which will be sent, without charge, on application.

A clear admission paper from any college of recognized character will be accepted as evidence of preparation, in place of an examination.

Graduates of colleges conferring degrees, who have the necessary qualifications for entering the third-year class in any of the regular courses of the Institute, will be so admitted, provisionally, on the presentation of their diplomas, and will be given opportunity to make up all deficiencies in professional subjects.

The feature of instruction which has been most largely developed in the school is laboratory training, shop-work, and field-practice, to supplement, to illustrate, and to emphasize the instruction of the recitation and lecture room.

Surveying-instruments are provided for field-work in civil and topographical engineering. Extensive shops have been fitted up for the use of both hand and machine tools, and a laboratory of steam engineering has been established as a part of the instruction in mechanical engineering. Several steam-boilers and steam-engines of various types are available for experiments and tests, as well as a large amount of special apparatus for measuring power, for gauging the flow of water, for tests of belting, etc. The laboratory of applied mechanics contains two testing-machines,—one for ascertaining transverse strength, the other for tension and compression,—besides apparatus for time-tests on timber, for tests of mortars and cements, for tests of shafting, etc. The department of mining engineering and metallurgy has the use of laboratories in which the milling and smelting of lead, copper, silver, and other ores, in economic quantities, are regularly performed by the students themselves. The classes in architecture supplement the work of the drawing and designing rooms by the examination of structures completed or in course of erection, and by practical experiment in the laboratory of applied mechanics, testing the strength of materials and working out problems in construction. The Kidder Chemical Laboratories consist of a laboratory for general chemistry (288 places); a laboratory for analytical chemistry (108 places), together with a special room for volumetric analysis (20 places) and a balance-room with 22 balances; a laboratory for organic chemistry (30 places); a laboratory for sanitary chemistry (16 places); a laboratory for industrial chemistry (16 places); two convenient lecture-rooms; and a well-supplied library and reading-room. The laboratories are thoroughly equipped for the purposes of ordinary instruction, and they also possess excellent facilities for the promotion of original research. The Rogers Laboratory of Physics, the first laboratory in which instruction was systematically given to classes by means of elementary physical measurements conducted by the students themselves, is well provided with the needful facilities for laboratory instruction in both elementary and advanced technical physics, especially in the different branches of electrical engineering.

On the successful completion of any one of the four-year courses of the Institute, the degree of "Bachelor of Science" will be conferred. The degrees of "Master of Science," "Ph.D.," and "Doctor of Science" are open to persons pursuing advanced studies and conducting original researches. Special students are allowed to enter special divisions of any of the courses, on giving evidence that they are prepared to pursue with advantage the studies selected.

The fee for tuition is \$200 a year. Besides this, \$25 or \$30 are needed for books and instruments. There are no separate laboratory fees; only payment for articles broken is required.

For information, address JAS. P. MUNROE, Secretary.

STONINGTON LINE—TO—NEW YORK.

PREPARATION FOR THE INSTITUTE OF TECHNOLOGY.



259 BOYLSTON STREET.

Wm. H. Ladd.

M. Grant Daniell.

REFERENCE

Is made to the President and Faculty of the Institute in regard to the thoroughness with which pupils are fitted at

CHAUNCY HALL SCHOOL,
BOSTON,

not only for passing the entrance examinations, but also for pursuing successfully their subsequent work.

FITTING
for the Institute has long been a specialty at Chauncy Hall. Thorough preparation is made also for Business and College.

J. B. McALOON & CO.

~Tailors~

Latest Styles.

First-Class Work.

SPECIAL PRICES

TO STUDENTS.

BOWDOIN SQUARE.

EVERY STUDENT

Of Engineering should be a regular reader of the

AMERICAN MACHINIST.

Largest paid circulation of any strictly Mechanical Newspaper in the world.

PUBLISHED WEEKLY. SUBSCRIPTION PRICE, \$2.50 A YEAR.

AMERICAN MACHINIST PUBLISHING COMPANY,

98 FULTON ST., NEW YORK.

CAFÉ WAQUOIT,

249 Columbus Avenue.

SPECIAL RATES FOR STUDENTS.

21 Meal Ticket, \$4.00.

Lunch Ticket, \$1.25.

SIX O'CLOCK DINNERS.

Evening Lunches from 9 until 11.30 P. M., 25 cents.

Cold Meats, Sandwiches, Sardines, Lamb, Tongues, Pretzels, Saratoga Chips, Bologna Sausage, Baked Beans, Pie, and Crackers and Cheese.

BOSTON & PROVIDENCE R. R.

—CAFE—

PARK SQUARE AND COLUMBUS AVE.

EUROPEAN PLAN.

Open from 6 A. M. to 11.15 P. M.

☛ Six Dollar Students' Tickets, \$3.00.

J. G. COOPER, PROPRIETOR.

OLD COINS AND STAMPS WANTED.

Send 10-cent Postage-Stamp for Coin Catalogue, giving all the rare dates and the prices we pay for them, to

JOHN C. SCHAYER, 147 Devonshire St., Boston, Mass.

Dealer in American and Foreign Coins and Medals, Confederate, Continental, and Colonial Notes, and U. S. Currency, Autographs, Old Newspapers, Relics, and Curios.

No letters of inquiry answered without stamp for reply.

GEORGE L. LANSING,

Thorough Instructor on Banjo and Mandolin.

Agent for the
Celebrated



S. S. Stewart
Banjo.

TREMONT TEMPLE ROOM 9.

STONINGTON LINE—TO—NEW YORK.

The Tech.

VOL. VI.

BOSTON, FEBRUARY 3, 1887.

NO. 8.

THE TECH.

Published on alternate Thursdays, during the school year, by the students of the Massachusetts Institute of Technology.

BOARD OF DIRECTORS, 1886-87.

T. W. SPRAGUE, '87, <i>Pres.</i>	H. C. SPAULDING, '87.
G. C. DEMPSEY, '88, <i>Sec.</i>	FRANKLIN W. HOBBS, '89.
W. L. DEARBORN, '88, <i>Treas.</i>	J. H. TOWNE, '90.

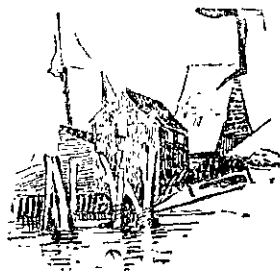
EDITORS.

SYDNEY WARREN, '88, <i>Editor-in-Chief.</i>	JAS. T. GREELEY, '88.
GEO. O. DRAPER, '87.	J. LAWRENCE MAURAN, '89.
QUINTARD PETERS, '87.	G. C. WALES, '89.
H. G. GROSS, '88.	_____, '90.

H. C. SPAULDING, *Advertising Agent.*

Subscription, \$2.00 per year, in advance. Single copies, 15 cts. each.

FRANK WOOD, PRINTER, 352 WASHINGTON STREET, BOSTON.



THE TECH offers its sincerest congratulations to those who have successfully passed the semies, and extends its sympathy to all those who got stuck. To one and all we would say, we are glad to see you again, and wish you success in your endeavors to keep all those good resolutions which we are sure you have made; for who does not make good resolutions at the beginning of the new term? Every one starts in with the avowed purpose of keeping up in everything; but how long does this last with most of us? A few of us perhaps do, but the majority soon fall into their old habits again, and have to work hard for several weeks before the examinations in order to catch up again. But all this THE TECH has discussed before, and was not what we started out to say now. Therefore, asking your pardon for bringing up this subject again, we will proceed to business.

As is known to most of the upper-classmen, if not to the Freshmen, there are three vacancies

yet to be filled on THE TECH editorial board, one of which belongs to the Freshman class. We have been encouraged by a few contributions from the Freshmen, but have not yet received enough to justify the election of any one. The upper-classmen have shown no interest at all, and there is no competition for places on the board. We trust that this will soon be remedied, and that our complaints in this direction will be stilled. The students should remember that the present board cannot last forever, and that when they have gone, there will be none to fill their places, if more enthusiasm is not shown.

IT is generally acknowledged that while examinations are not to be desired, they are, at least at present, a necessary evil. But so long as there has got to be this evil, should not the professors endeavor to make it less, by stating the questions in plain, straightforward English, so that every one could see at once what answer is desired, and could at once assure himself whether he knew the answer or not. Would not this be much better than endeavoring, as some of the professors have done, to shroud the questions in such a mystery of involved sentences and grammatical peculiarities, that the poor student not only cannot answer the question satisfactorily to himself, but even does not know whether he is answering what the professor wished him to answer. It certainly does not appear fair to us that a man should have to work both on the answer to a question and on the exact meaning of the question itself besides. It certainly is not the kind of treatment he will meet with in after life, for then all questions will be of a most practical nature. Why some of our professors will therefore continue to write examination-papers which are of this vague, nature is incomprehensi-

ble to us. And this vagueness is not the result of their inability to write good English, though it certainly at times would appear so. In a certain examination of the last semies was a question so involved in relative clauses, parenthetical sentences, and vague adjectives, that it took the full intellect of the professor himself to see what he really did mean. That his intention was to write a question nobody could exactly understand, was evident, as he was heard asking one poor unfortunate if he grasped the exact meaning of the question; and upon receiving a negative answer, appeared as much pleased as the unfortunate student would have been if told that he had received an H in a study.

This is not exactly the kind of treatment we have been led to expect that we would receive from our professors, who are pictured as always most ready and willing to assist us in our studies. It would seem that such a course would tend to revive the old "natural enemies" doctrine between professor and student, and thus cause a break in that harmony of which we are so proud here at the Institute.

THE rapid growth of Boston around and about the Institute offers many subjects for investigation, presenting as it does so many chances as to speculation concerning the future.

The Rogers Building, when completed, in 1866, stood alone in its grandeur, being practically outside the city proper. The last twenty years has made wonderful changes, the Institute now being surrounded by the principal public and private buildings in the city, and occupying the most desirable situation for the purpose that could be obtained. We are so accustomed to these advantages that we fail to appreciate them all.

Now, there seems to be a feeling, and perhaps a substantiated one, that this part of the city will eventually be given up to trade. Inroads are already being made, and the "Back Bay" dwellers

are moving farther away, in consequence. If twenty years has wrought such a change in our surroundings, what may another twenty years effect? You may think that this is of no consequence to you, but the future welfare of an institution where you spend four years of your life, should have some interest.

There is no doubt but that the change of our present surroundings to a busy mercantile center, would involve many disasters to the Tech. The noise and confusion, the greater distance from dwellings, etc., all would be objectionable, while there would seem to be no advantages incurred to offset them. As we have a perpetual grant of the square we occupy we should have some privacy,—about twenty feet,—but not enough to serve the required purpose.

Another question which comes up in connection with the discussion is perhaps more serious. If the Institute itself has grown to twice its original size, and is still increasing, where can it spread to? No more buildings can be erected on the present lot, and with the growth of the city the number of vacant spaces in the vicinity will be less. It would be decidedly objectionable to have the Institute split, so as to have a considerable distance between any of its structures. Any scattering should be avoided, if possible. It may happen in the future that we will have to pull up stakes and make an entirely new settlement. It is impossible to embody in one the advantages of country colleges with their abundant room, and city colleges with their peculiar benefits. We shall have to make the most of the many superiorities which we possess, and thus counterbalance our inconveniences.

IN its last number THE TECH spoke about the mysterious marking system in vogue at the Institute. It is just at this time that every one would most like to know what his actual per cent in everything is, and also his standing in his recitations, apart from that of his examinations.

The general desire seems to be not to do away with the marks P, C, etc., but to have along with them the per cents. The great beauty of this letter system to the students is, that no exact per cent is set for a pass. That is, if 50 per cent is the pass mark, then a man who gets 49.5 per cent will not fail, as is the case in some colleges. It gives us the advantage of a sliding scale, of which the benefit to us is most apparent. But the great reason why most of the Techs wish their percentages given, is, that there is an idea very prevalent that each student is marked on a separate standard, which is given to him by his professor, and that this is merely an arbitrary standard which exists only in the mind of the professor, and varies with each student. Thus it is supposed that many a man can get a credit on an examination paper which others would get a P or an L on. Why is this? Alas! we are unable to say; but somehow or other the professor gets an idea that a man is not working up to his capabilities, and hence marks him lower than his record deserves. Another man who has shown by his hard work that he is doing all he can, will be helped along and given a higher mark than he has really obtained. Is this fair? Is this just to those other fellows who do not work as hard as they can, to place such a premium on a man's natural stupidity? It certainly does not seem right to us. And yet such marking as this comes from our marking system. We do not believe that if our per cents were given us along with our other marks, that a professor would dare to mark one man a C, with 70 per cent, and another a P, with 75 per cent. It would look too much like favoritism; and this is a charge which we do not believe that any one of our professors would like to be saddled with.

That this is no made-up story, we know, for we have been repeatedly assured by various professors, that in making up our mark our previous record is always taken into consideration, and that no man is marked on the record of one examination alone. This would seem to be a benefit rather than anything else; but it has been the general experience that a man's former marks

may easily pull him down, but that they never raise his standard by any chance whatsoever. If the plan worked both ways there would be little objection; but it has not been found to do so by the students.

We have hard work here, and plenty of it, but yet we believe that there are but few regular students who do not find some spare time for amusement, or who do not find themselves able to use some of the time allotted for study for some other purpose. That this is a fact we can prove, by asking how many actually put in forty-eight hours of study per week that is assigned by the Faculty. We are willing to wager that there are but very few, not even the men who get nothing but H's and C's being entirely included.

Indeed, it would be impossible for a man to keep up such a strain as this for eight months and not break down; and yet what professor is there who will not tell you that you are not doing all you can do and should do, if you inform him that you do not spend the allotted two hours per lesson on his particular branch? That professor will be most apt not to give you the benefit of a doubt when hesitating between two marks to give you. You will be pretty sure to get the lower one. If you should have the courage to ask why your mark was not so high as some one else's, whom you are positively sure knows no more about the subject than yourself, you will be politely told that the interest you manifested was not sufficient to grant you anything better.

Although percentages cannot entirely do away with an arbitrary standard in the case of each professor, they would undoubtedly lessen the evil, and cause the fellows to be more contented.

Some of the ideas among the students concerning their marks may be erroneous, and very possibly are; but if the Faculty wish to do away with any of them, they should explain the whole matter in a straightforward way to us; and if they cannot or will not give us our record in per cents, and prefer to keep us in ignorance of our real standing, at least we would like to know the reason why.

The Animated Skeleton.

A Thrilling Adventure in the Natural History Building.

EDITORS OF THE TECH.:

Gentlemen,—The other day I came across the inclosed MSS. and pictures, and thinking that they might be of interest to your readers, I inclose them to you. The story was written in 1876, which will explain any apparent discrepancy of dates. Hoping that this may be of use to you, I remain,
Respectfully yours, W. J. S.

A FEW days ago I visited the rooms of the Natural History Society, on Back Bay, to while away a few hours of unoccupied time, and to refresh my memory with what I had seen there a few years before.

The day was unusually warm; and having had occasion to walk around the city a great deal, I was more wearied, as the result will show, than I was aware of.

Beginning my examination in the departments devoted to the display of minerals, I noted what was of special value to me in my study of mineralogy, and promised myself another visit, to complete the examination of some fine specimens of historic geology, which my limited time would not afford. The cast of the Australian nugget of gold, glittering with gold-leaf, and resembling an immense, rough dumb-bell, particularly attracted my attention, and I envied the fortunate discoverer who, in one huge mass, acquired a princely fortune.

I passed from room to room, looking at many things casually, but occasionally lingered before some object that was prominent or important in its department. Among the latter, I remember gazing up at the stupendous frame of the razor-back whale till my neck ached; and at the gigantic megatherium in wonder; and at the ponderous vertebra of some fabulous-sized reptile, whose disjointed links wound around the head of the staircase.

Being of a moralizing nature, I remained leaning on my cane for quite a time, musing before the cabinet of human, gorilla, chimpanzee, and other kindred skeletons; and left them with many curious, sad, and fanciful ideas floating through my brain.

Skulls, skulls, skulls, I repeated mentally, as

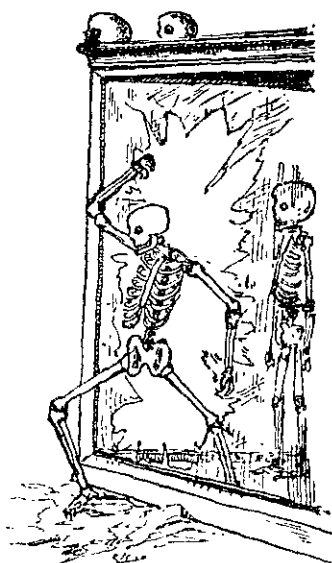
I moved away from the innumerable array in several cases,—ancient Peruvian, Egyptian, Negro, Indian, with that of an occasional private famous criminal or notorious character, labeled for the information of the curious inquirer.

At about half-past four I reached the last room, after systematically loitering from one to another, and from gallery to gallery. I found myself in a little corner room at the top of the building. I was tired, and sat down to rest for a few minutes, knowing that the usual time for closing the museum was five o'clock. I discovered as my *vis-a-vis*, after seating myself comfortably, a life-like white bear, whose eyes glared directly into mine.

I wiped the rills of perspiration from my overheated face and neck, and allowed my thoughts, filled with the caravan of objects I had seen, to wander idly through my brain,—skeletons, skulls, fishes, ores, birds, insects, reptiles, stomachs, bottled infants, brains, spinal-cords, etc. While these, like an unnoticed throng on a public street, wended their silent way, the eyes of the polar bear and the long, flat back of the black seal occupied my more immediate attention. How I came to notice so specially those eyes I shall never know; but the more I looked the more I became aware that they were searching my very soul with their wonderful, scrutinizing power. The gleam of cold ice-fields and frozen mountains was in them; and the iridescent glitter of icebergs flashed at me from their angry and hungry depths. I shuddered. Cold beads of perspiration rolled down my face. A strange hum filled my ears, like the washing of heavy Arctic seas, in the distance, mingled with the crunching of field-ice. I had heard it often in the bitter experience of two winters in the North with an exploring expedition. A dreamy terror spread through my veins. I fainted, and my head fell back against the cabinet of birds and small animals.

When I again appeared to become conscious, I arose, glanced furtively at the fascinating orbs of the polar monster, and escaped from the room. It was rather dim, and the extreme silence alarmed me, for I feared that I had remained

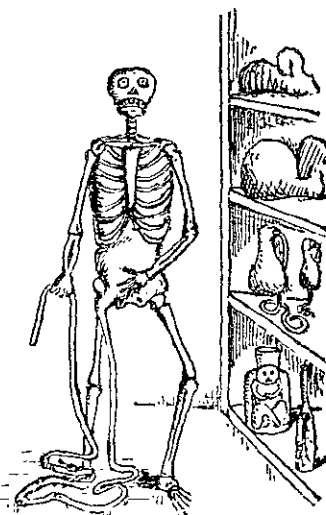
unobserved by the janitor, and was locked in. Cautiously feeling my way down the first flight, where it was darker, on account of the stairway being built against the side of the wall and paneled in, I was about to pass along the gallery, when I heard a sound of shattered glass below. Startled for a moment I remained still, and then leaned over the gallery and looked down into the hall, to endeavor to ascertain the cause. Smash,



smash, and again the glass fell in fragments. It was directly below where I was looking over. I saw the pieces fly from the cabinet containing the human skeletons. Assuring myself that it must be a cat or a dog that accidentally got shut up there, and was wild to get out, and had broken the lights in its frenzy, I was about to

call and run down, when I saw something step slowly out. Straining my sight and riveting my gaze on the thing, imagine my utter astonishment and fright to behold a *bleached human skeleton stand boldly out on the floor!* I was petrified with fear. My hair seemed to be endued with life, and crawled over my head like worms; and a death-chill crept over my whole body, crimping my skin into mole-hills of goose-flesh. Can such things be? Is there life in dry bones? The startling phenomena and vagaries of Spiritualism and its strange assertions, the marvelous stories of ghosts, apparitions, obsessions, demons, of which I had so often read, filled my mind in an instant. With eyes starting from their sockets, I stared down on the centennial miracle. It remained for a time quiet, and apparently glancing around; then, with a bony clatter, slowly strode toward some stuffed animals across the hall. Passing its long fingers over them, as if seeking a choice of something, at last I saw it deliberately dig out the glass eyes of one and fit them into its own sockets. It was evidently much pleased with this acquisition, for it seemed to have gained the power

of vision from their possession, and walked around and glanced up along the galleries, to my dismay; and I trembled with fear of being discovered by it. Then, as if suddenly possessed with some purpose, I saw it approach the stairs leading to the galleries beneath me. I listened. It was positively coming up. My first impulse was to run around the gallery and escape down the other side into the lower hall, burst open a window, and leap to the ground. But, frightened as I was, my curiosity was intensely excited to know what next this frame-of-bones would do. I heard its hard tread enter the room below. On tiptoe I quietly and quickly arrived at the foot of the stairs, and peeked into the apartment, and to my utter amazement saw it crowding an extra-sized human stomach, with its accompaniments, under its ribs,—pushing it up as a schoolboy does a book or slate under his jacket. Having fitted the upper parts, it tied the dangling intestines around its back bone, and passed them through from one side of the sacrum to the other, till they were out of the way. After accomplishing this, it allowed the wind to escape by unwinding a string from the thorax, remarking in a horny, gristly voice (which sent a fresh chill through me), “I don’t like wind on the stomach.”



I had barely time to get into a corner of the stairway when it came out and remained standing, as if cogitating for a few minutes, within a few feet of me. Curiosity and terror were certainly strangely mingled in me in that dreadful position. Much to my relief it passed by me, and went around examining the contents of each room that it entered, till the large jars and bottles containing fish attracted its attention. With the utmost care I persisted in following, and observing its movements and actions. The contents of the jars were critically examined, and the labels carefully scrutinized. Having

selected specimens—the names of which I afterward learned—of *amblodon grunniens*, *perca flavescens*, *catostomus*, *leiostomus obliquus*, etc., it broke off the



tops of the bottles by rapping them against the shelves, making a hideous crashing of glass, which I was surprised was not heard upon the street, and the attention of an officer called to it.

Eagerly it devoured some of the choicest specimens in the department, which fell into the stomach with mealy thuds. Having finished its ichthyophagous repast, it lifted up one of the jars, and at one long draught, drank the alcohol in which the fish had been preserved. The stomach swelled till it bulged out below and between the ribs in ridges, completely crammed. With delight the grim being slapped its sounding bag and stroked down the protruding bunches, remarking that “he was always partial to good food and drink; and what is in the bones cannot be taken out of the flesh.”

Coming out, it proceeded down into the upper hall from which it originally came. Here it was quite interested in observing the cases of skulls that had attracted my attention, and to my astonishment I actually heard it mutter, as it moved away, “Skulls! skulls! skulls!”

After lingering in this place awhile it passed down into the lower hall, and into the mineral apartment, where many of the objects attracted its attention from the glitter of their crystals and their beauty. But the big Australian nugget, resembling a huge, rough dumb-bell, was an object of unbounded admiration. The glass was quickly demolished, and the gilded resemblance drawn out from its resting-place, laid down on the floor, and turned over and over, with sundry ejaculations of pleasure and surprise. Hoisting it on to its shoulder it passed out, and up into the hall, and laid it down on the platform on which the *megatherium* is mounted.

I became aware now that its actions bore evidence of the influence of alcohol, for its feet at times seemed to be in each other's way, and it would run a few steps, stop, stagger, and howl, strike with its fists on its shining skull, which emitted a mellow, hollow sound like a half-filled water-melon, pranced around, climbed up the back of the gigantic sloth and down the tree-trunk. Stooping suddenly, it grasped up one of the ponderous joints of the vertebra of the fabulous-sized *zeuglodon certoides* which wind around the opening into the hall, and balancing and swinging it, sent it rolling and bouncing along the floor, at the end of which it went crashing through the glass doors of the cabinets, heaping up the specimens of antelopes and deer in ten-strike confusion. Joint after joint followed in quick succession till they were exhausted.

Suddenly picking up a newspaper which some visitor had left on a settee, it opened the sheet and stared at it, turning it over several times. Then glancing at the name and heading, I heard it mutter with hiccoughed surprise: “What! Possible! 1876! Why, the last paper I saw was in 1804!” I could distinctly see a glimmering phosphorescent light fall on the paper from its eyes as it looked over the columns. It made many remarks and criticisms on the events recorded therein, but I only remember a few. It expressed unbounded anger at the “want of patriotism in the people of New England for not coming forward and purchasing the Old South Meeting-House at once,” and remarked: “When I helped to empty the tea into Boston Harbor, and afterwards fought at Bunker Hill and at other places, I could not think the people would degenerate so much as to want to tear down or remove the building where the patriots of my day had defied the British Government and idiotic George III. That’s where the ministers used to pray for the old fool,—‘God save King George III!’ We saved him by putting him in a pickle! Now it is time to pray ‘God save the Old South Church!’” And I heard him (for in allusions to himself I now discovered his sex) say with a gush of fervid pride, at which the

pale light increased to a glow, that he "helped to pull the bell-rope of the old church on the memorable 16th of December, 1773, which summoned the people to meet at three o'clock to receive Hutchinson's reply to the committee's petition. Why, that's the cradle in which the young Hercules of Liberty strangled the snake of despotism; and I guess they had better keep it in the family, for they may need it again if this newspaper tells the truth. And the new church has taken off the old bell. A diamond in a lead setting. Well, that's the way the Tory pastor of King's Chapel marched off with the church plate when the Hessians were driven out of Boston by General Washington; and I guess it hasn't been returned yet. Tear down the old church! Remove it! They might as well tear down John Hancock's house, the Old North Church where my old friend, Paul Revere, swung out his lanterns, or the Brattle Street Church, or King's Chapel, or pull down the Great Elm. Why, I will wake up the skeletons of Copp's Hill, the Old Granary, of King's Chapel, and from the vaults of the Old North, and we will march down and fill the old building as we did a hundred years ago. There is eloquence even in the bones of the men who led us then.

"Now, here is another piece of information I don't like. The country is full of robbers and scoundrels. And then this soft and hard money business: I suppose soft money is continental paper, which was so soft that it took a peck of it to get a mug of hard cider or New England rum. I like the hard money; there's a clink to it." Here he slapped the Australian nugget, and petted it gently. That's the stuff. And there's going to be a general election; and one of the candidates on each side is a hard and the other a soft money man. That's rather amusing. I don't know much about this Democratic party,—it didn't exist in my time; but the Republican did, and then it was the safest one; but it doesn't appear to be so now. It's as full of rotten bones as the back-yard of a butcher's shop.

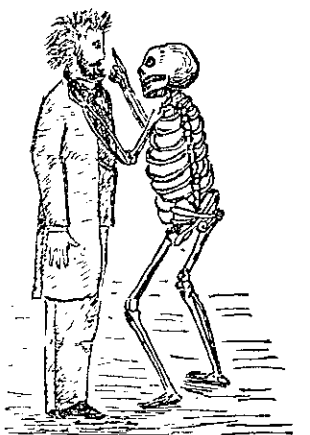
"Some things mentioned here I cannot un-

derstand,—telegrams, cablegrams, railroads, and steamships. Of course a ship cannot cross the ocean in eight or nine days; it takes at least thirty. That cannot be it. And then, cablegrams,—news the same day from London, England, and from Paris, and all over Europe! Ha! ha! ha! This is printed in an insane asylum; and that is why everything is so mixed up. Some lunatics are very comical. There was one living over on Dorchester Neck, who used to tell about trees that he saw when he was with the Western Indians,—trees six or eight times as high as the Liberty Tree or the Great Elm. And he had a number of stories just like it. I will hide this paper, for it is amusing reading.

"Now, if I can only get out of here with this lump of gold,—hard money,—I can have a jolly old time, such as I had when I was a young man. Perhaps I can open a window."

As he was raising the nugget to his shoulder it slipped, and fell to the floor with a noise that resounded through the silence and dusk, echoing and rechoing along the galleries, and repeating in loud, rude tones, "Five o'clock! Five o'clock!"

This vocal phenomenon was so astounding that I involuntarily uttered a terrified yell, which again filled the building with replying echoes, as if a million demons had been startled from their peaceful possession. But it was scarcely out of my throat when, with an angry howl, the skeleton leaped toward me. I could not move. I tried to run; but my feet were rooted to the floor. With a fierce clutch he clasped my coat-collar at the neck, and stooping slightly, glared up into my eyes. I could not even close my lids to shut out the loathsome object. Shaking like a statue of jelly; my eye-balls glaring wild and fixed; powerless to move,—what could be more terrible? The stench from his sack of alcohol and rotten fish; the phosphorescent glimmer and the wrathful flashes of mingled blue and yellow flame that



sputtered intermittently from his awful sockets; his ghastly and bleached frame of bones, gorged like a vulture with carrion,—this was what I faced. What could be more horrible?

With a fierce impulse and a shriek of anguish I bounded back, tearing myself free from the awful presence.

I awoke, and found myself standing before the polar bear and the black seal. My clothing was saturated with the perspiration that flowed in streams from my whole body.

Near by was a man staring at me with surprise and suspicion. He was the janitor. He was closing up, and found me asleep, gasping, and laid his hand on my collar to awake me, when I sprang from my seat with a bound and a yell. He thought I was intoxicated, and was disposed to treat me roughly; but I assured him with earnestness that he was mistaken. I had remained there to rest awhile, fell asleep, had a fearful dream; and thought, when he put his hand on me, that one of the skeletons down stairs had hold of me. He smiled at my adventure, and I left, winding my way down the circular flights, while he went from room to room calling out in a loud voice to the visitors "Five o'clock! Five o'clock!"

COMMUNICATIONS:

TO THE EDITORS OF THE TECH:

Dear Gentlemen,—Something was promised you by me some months ago; but either want of brain to concoct some romantic story, or business (you can take your choice—some of you know me), has prevented my sending you anything until the present time. All the readers of the TECH will, I know, take an interest in this communication, but those who live in the Middle States will take an especial interest. Some of us out here in the city, with the big feet, but the crack base-ball nine (I always have to get that in, Pete), have for some time discussed the chances of an Alumni (?) Association of the M. I. T., to be composed of graduates and former students (I had to get in myself, you know) of the Institute now resident in Illinois. Well, we hunted up as many names as we knew, and sent on

to headquarters for more; and when we had 'em all collected we counted 'em up, and there were an even fifty in all. We felt pretty good, I tell you, when we found we had so many; then we thought a little while, and then we shuddered, for there came to our minds, all at once, a picture in last year's *Technique* of one of '86's class-meetings. We wondered if, when we called a meeting, we couldn't turn out a better crowd than the President and one man (?). (This question-mark refers to '86 and its *men*.) Well, we knew we had to strike, so we struck. We got an old papyrograph—I beg your pardon, we don't use them here; I thought for the moment I was back at the Tech. looking over scarlet ink. But to resume and correct, we got an old type-writer, and sent out invitations for all to gather at the Leland Hotel, to organize the M. I. T. Alumni Association. It fell on me to secure the room at the Leland; so I went about a month beforehand, in order to be sure of it, and to give the man time to have it warm (it's pretty chilly here). Well, I fixed that all up, and then all we could do was to wait and see who would turn up. The day came at last. Will I ever forget that day? It was January 9th—excuse me; no, it wasn't, either; it was Saturday, the 8th. Well, the invitations were out for 7.30, and I was punctual. I walked into the hotel and asked the clerk with the Alaska diamond if the room for the Massachusetts Institute of Technology Alumni Association was ready. "Wh-a-a-at?" gasped he. "Well," said I, "the name *is* long, and I don't care to repeat it; but is the room ready?" He then admitted, with tears, that he had forgotten all about it, but would give the "Massachusettsinstitutechnology-lumnisociation" a parlor, if we desired. We desired, so were shown to the parlor—that is, about ten of us, who had gathered below and introduced ourselves to one another. Then they came in by ones and twos, until twenty-one, actual count, ushered themselves in. Most everybody met most everybody else; and then, at the request of the assembly, your humble servant opened the exercises with a prayer. None of them heard the prayer, though. It was a private and individual one for the benefit of myself, trusting, because of my steadfast faith and faithful attendance at the chapel while at the Institute, the Father Omnipotent would carry me through the ordeal of addressing an audience of staid graduates of the Tech., of the classes of '68 (the first) and thereabouts. By beginning with the well-known words,

"Now, gentlemen!" it brought the recollection of a brave and worthy man to my mind, and the proceedings commenced. Mr. E. C. Potter, '81, was elected temporary secretary, and he carefully jotted down the remarks of the wise men. During the meeting we decided that we would not limit the membership to only those resident in Illinois, but would admit any one who lived anywhere on the face of the globe,—at least, that is the understanding I had of the limit. In fact we want the earth, with a fence around it. This is cordial, anyway,—and we want to be cordial. A committee of five was appointed to draw up a Constitution and By-Laws, and report at our next meeting. Messrs. Wells, Curtis, Greeley, Potter, and Sturges made the committee. We decided to have another meeting February 12th, and to have at this meeting a little informal pie. We intend to have a nice, big dinner some time, but we are going easy now, and beginning on pie. We think when we meet next, we will have at least a hundred names on our list. We closed Saturday with about seventy-five. We talked of having our stag dinner some time during the Tech.'s long summer vacation, so some of the young "spuds" could attend, if they so desired. I think this will be adopted.

Well! I guess I have written my all. We start out with great promise, and I know will be a great success. We heartily invite any of the undergraduates to join us at our dinner, and we will keep ourselves before your eyes so you cannot miss the date. (I will send price of plate later on.) Any who may read this, who will kindly send to Mr. E. C. Potter, care North Chicago Rolling Mill Co., South Chicago, any names whom he may chance to know in the vicinity of the earth, we will consider it as a personal favor to—well, we will be very much obliged. Hoping all of the TECH's readers passed successful semies, I remain,

Yours, as ever,

S. S.

CHICAGO, Jan. 12, 1887.

Noticeable Articles.

THE January *Atlantic* contains an interesting paper entitled "What Children Read," by Agnes Repplier,—a name one hopes to meet again. The writer gathers from her own reading accounts, of the youthful reading of various men and women of gen-

ius, and contrasts it with the material the mind of the youthful generation of to-day is fed on, greatly to the disadvantage of the latter.

Here is young Scott absorbed in Percy's Reliques, and in raptures over an odd volume of Shakspeare; Cowley devouring the Fairy Queen that lay in his mother's window-seat; the future Cardinal Newman wishing that the Arabian Nights were true; the youthful Cobbett going hungry, that he might possess himself of Swift's Tale of a Tub; and Mary Lamb "tumbled, by accident or design, into a spacious closet of good old English books." In contrast with all this, the writer declares that "if we pursue the modern schoolgirl along the track of her self-chosen reading, we will [shall] be astonished that so much printed matter can yield so little nourishment." "With her appetite whetted," she continues, "by this unsatisfying diet, she is soon ripe for a little more excitement, and a great deal more love, and so she graduates into Rhoda Broughton, and the "Duchess," at which point her intellectual career is closed."

It need hardly be pointed out that there is a fallacy involved in thus contrasting the sons and daughters of genius with the readers of Rhoda Broughton of to-day. These latter, in earlier times, would simply have read nothing at all. Perhaps it would have been better for them; and it must be conceded that an enormous amount of trash is devoured by young people now, to the great detriment of their intellectual digestion. The writer goes on to contrast some of the children's stories of to-day with stories of a previous generation, in a very amusing manner; Miss Edgeworth's Rosamond, *e. g.*, "a portrait of the youthful Maria Edgeworth herself," with Miss Alcott's Rose. "It is true," she says, "she had no sense of a 'mission,' this commonplace, but very amusing little Rosamond. She never, like Rose, adopted a pauper baby, or made friends with a workhouse orphan, or vetoed pretty frocks in favor of philanthropy," but she thinks her, perhaps, a more natural little girl. But Miss Alcott is nature herself compared with Miss Wetherell, whose "supernaturally righteous little girls pin notes to their fathers' dressing-tables, requesting them to become Christians, and who endure the most brutal treatment at their parents' hands, rather than sing songs on Sunday evening." Miss Repplier has even found a story, though she does not give the name of its remarkable author, in which the youthful heroine considers it her mission in life to convert her

grandmother. "Girls, wrote Hannah More, "should be led to distrust their own judgment ; but if they have the conversion of their grandparents on their hands, how can they be distrustful?"

"There is no more charming writer for the young," she says truly, "than Flora Shaw; yet Hester and Phyllis Browne, and even that group of merry Irish children in Castle Blair, are all convinced that it is their duty to do some difficult or dangerous work in the interests of humanity, and all are afflicted with a premature consciousness of social evils.

"The time is out of joint; oh, cursèd spite!
That ever I was born to set it right,"

cries Hamlet, wearily; but it is at thirty, and not thirteen, that he makes this unpleasant discovery."

Of course there is another side; but there is too much truth in this bright and entertaining paper, and it is a serious question what is the true remedy. When good English books could be contained in a spacious closet, Mary Lamb might be left to "browse at will upon the fair and wholesome pasturage;" but how stands the case since the field of even wholesome literature has become wider than a Western prairie? Young people must have discipline and guidance. English literature must be taught, but it is very questionable whether the right method has yet been discovered. The only way to keep girls from Rhoda Broughton, and boys from wasting time on the Peter Parleys and Oliver Optics of the day, is somehow to give them a taste for other reading. A *taste*, I say; but a taste is not given by the present methods of making taskwork of literature. The Rev. J. M. Wilson, head-master of Clifton College, in England, in a letter which he contributes to the discussion occasioned by Sir John Lubbock's foolish attempt to enumerate the "best hundred books," has some very good remarks on this subject. "The teacher of literature," he says, "must himself have something of the creative faculty: he must be the essayist and poet; he must be fired with an enthusiasm so strong and sturdy that years of school-life, with its *crambe repetita*, shall not kill it. But such men are rare, very rare in any class of society under any conditions. Hence, school-teaching of literature will, in general, be either the getting-up of little annotated text-books, with their scraps of philology and ready-made criticism and antiquarianism, all to be got up for examination, very often at the expense of neglecting the text, or the mere compulsory reading of English books in the same slight way that nine-

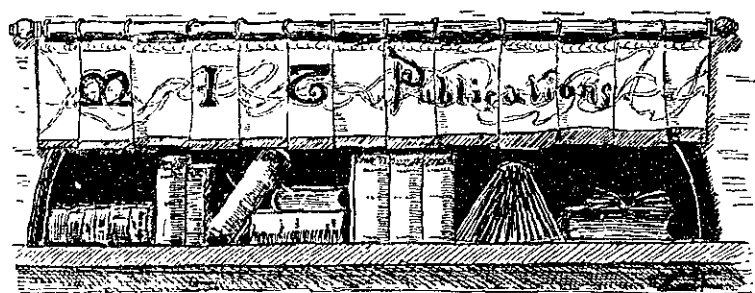
teen people out of twenty read them. The results are not valueless at the time, but I think it may be doubted whether this sort of study attracts boys to literature, and does not rather repel them. A study that is begun too soon is rarely loved. It is spoilt as a pleasure; and if literature is not a pleasure, it is not read. If 'Marmion' or 'Ivanhoe' is set, even, as a holiday task, Scott is *ipso facto* reduced to a school-book; or, in other words, he becomes not a book at all. I doubt whether the present generation who have passed through our schools during the last fifteen years, care at all more for literature than we of thirty years ago cared. Indeed, my belief is that they care less, and that we should have cared less, if we had had masters prescribing to us what to read, and interfering with our growing tastes. Very bad some of these tastes doubtless were,—I remember swearing by Alexander Smith as a poet,—but then they were our own, and the correction came when we were ripe for it."

The present writer's experience corroborates that of Mr. Wilson, that it is not among boys who have been crammed with "annotated" texts that we are to look to find lovers of good reading, but quite the contrary. When they are found, which at present is not very often, they are either those who have a taste implanted in them by nature, or else those who have been brought up among persons of real culture. But these objections lie not so much against the teaching of literature as against bad methods of teaching. The time is perhaps coming when a distinction will be drawn even among school-studies, between the disciplinary and the pleasurable, and it will no longer be considered a mark of bad teaching for a school-boy to *enjoy* a certain number of his school exercises; when, indeed, the amount of his enjoyment will, in some cases, be considered the measure of the teacher's success. The teaching of the English *language*, for instance, may well be made a strictly disciplinary study when once we have the right sort of manuals. But why should the study of the language be mixed up as it is now, in the hodge-podge of annotated text-books with the pleasurable reading of the literature? Is *Paradise Lost* good for nothing but to be parsed, or the text of Shakspeare to serve only as a peg to hang variorum notes on? Cowley in his window-seat, and Mary Lamb in her closet of old books, studied literature to much better purpose.

The venerable Dr. Hedge, of Cambridge, has a good paper in the December number of the *Forum*,

on Sir John Lubbock's "Hundred Authors." He thinks that "one may very well afford, without detriment to one's intellectual well-being, to leave unread two-thirds of the authors named ;" and he goes on to point out some of the absurdities of the list, and the absurdity of attempting such a list. "Meanwhile," he says, "a better, certainly a more entertaining enterprise than that of compounding centuries of authors, would be a challenge to accredited scholars to communicate their own experience in this field, and to specify the books which, to them, individually, have proved most fructifying."

W. P. A.



MASS. INSTITUTE OF TECHNOLOGY.—President's Report, Dec. 8, 1886. Pph., 8vo., pp. 32. Boston, 1886.

ASSOCIATION OF THE CLASS OF '85. The '85
Annual. Pph., 8vo., pp. 54. 1886.

CLASS OF '88. Technique, 1886. Pph., 8vo., pp.
160. Boston, 1886.

FAUNCE, L. Descriptive Geometry. Prepared for the use of the students of the Mass. Institute of Technology. Cloth, 8vo., pp. 48, with 16 plates. Boston, 1886.

HAYES, H. V. (Stud., 1883-85), with John Trowbridge. Application of Photography to Electrical Current Measurements. *Sill. Jour.*, 29, N. S., 374; *Philos. Mag.*, 19, 513.

———, with John Trowbridge. On the Production of Alternating Currents by means of a Direct Current Dynamo-Electric Machine. *Sill. Jour.*, 29, N. S., 377; *Philos. Mag.*, 19, 516; *La Lumiere Electrique*, 16, 628.

——, with John Trowbridge. Causes of Irregularity in the Action of Galvanic Batteries. *Sill. Jour.*, 30, N. S., 34; *La Lumière Electrique*, 18, 73.

HOLMAN, S. W. (76). Physical Laboratory Notes. Mass. Institute of Technology. Pph., 8vo., pp. 83. Boston, 1885.

HOYT, W. E. ('68). Household Sanitation. An address delivered at the annual meeting of the Academy of Sciences, Rochester, N. Y., January, 1886. Cloth, 12mo., pp 28. Boston, 1886.

LANZA, G. (Prof.) Notes on Mechanical Engineering. Mass. Institute of Technology. Pph. 8vo., Part I., pp. 43; Part II., The Injector, pp. 30; Part III., Steam-Pumps, pp. 20. Boston, 1885-86.

SCHWAMB, P. ('78). Notes on the Elements of Mechanism. Prepared for the use of the students in Mechanical Engineering. Mass. Institute of Technology. Pph., 8vo., pp. 165. Boston, 1885.

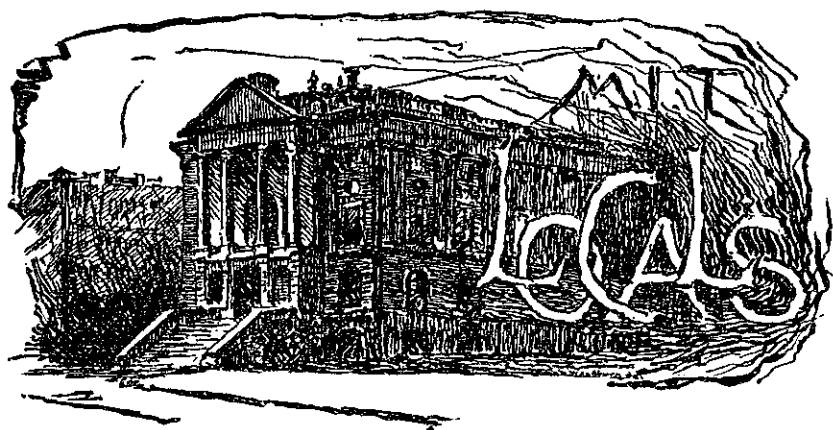
——— Illustrations and Details of American Machine Tools (accompanying the above-mentioned Notes). Pph., 8vo. Part I., pp. 82. Boston, 1886.

SWAIN, G. F. ('77). Notes on Hydraulics. Prepared for the use of the students of the Civil Engineering Department of the Mass. Institute of Technology. Pph., 8vo., pp. 84. Boston, 1885.

WEAD, C. K. (Stud. 1872). ———Line of contact between the Hammer and String in a Piano. *Sill. Four.*, 32, N. S., 366.

Inter-Collegiate Press Association.

ON January 26th, a preliminary meeting of the representatives of the student publications in the neighborhood of Boston, was held at the Quincy House, to make arrangements for a larger convention of the New England college papers. *The Tuftonian* was represented by D. L. Maulsby, '87, S. A. Foster, '87, W. L. Fairbanks, '87, and F. O. Melcher, '87; the *Harvard Advocate* by W. Weatherbee, '87, and M. D. Mitchell, '87; the *Beacon* by A. H. Wilde, '87, and J. E. Bowman, '89; THE TECH by A. S. Warren, '88. D. L. Maulsby was elected chairman *pro tem*, and W. L. Fairbanks secretary *pro tem*. It was decided to call a meeting of the New England college papers for the 22d of February, in Boston. A business meeting will be held in the afternoon, and a banquet in the evening. The following committee was appointed to make all necessary arrangements: D. L. Maulsby, S. A. Foster, A. S. Warren, M. D. Mitchell, and A. H. Wilde. It is sincerely hoped that all the papers will send one or more delegates.



Mind Readings — Examinations.

"Held by the Enemy" — Br-n's cane.

Books for grinds — Bohn's Library.

University of Penn. has a book exchange on the same principles as the Institute.

Jos. Neave, '86, has shown the first signs of insanity — he has invented a car-coupler.

Several students were bidders at the "Devil's Auction" when it was in the city.

Mr. J. B. Loewenthal, '87, has left the Institute, to go into business in Chicago.

The Glee Club sang in Milton, Monday night, and scored a success.

Mr. Charles H. Atkinson, '87, who has been ill for several weeks, is convalescing in the Bermudas.

The Senior Mechanicals petitioned for extra shop-work instead of Constitutional History this term. The petition was not granted.

The Seniors have generally begun work on their theses. They embrace a great variety of subjects.

President Walker delivered an address before the Women's Industrial Union, on "Woman's Work and Wages," on January 11th.

Tobogganing is the popular pastime up in the architectural drawing-room. They teach the young idea how to chute up there.

Professor Cross stated that Linus is not a good experimenter. The '89 men agreed with him after the examination in Descriptive Geometry.

Mr. W. H. Chadbourne, Jr., '86, of Wilmington, N. C., formerly Treasurer of THE TECH, has been in the city recently, meeting old friends and making new ones.

Professor Sedgwick and Doctor Williams, of the Harvard Medical School, have delivered lectures before the Freshmen on the "Hygiene of Student Life."

According to the Boston papers, F. L. Dame paid Miss Fortescue a great deal of attention when she was playing in the city. How about it, Dame?

Owing to the illness of Mr. Jameson, the fourth year examination in Railroads was postponed until the first part of this term. The examination in Railroad Management was omitted.

Reports from Professor Richards give the pleasing news that he is regaining his usual health. He will stay in the Bermudas until he fully recovers from the effects of his recent illness.

Mr. Charles H. Woodbury, '86, has a picture in the Boston Art Club exhibition that is attracting notice. The subject is "East Gloucester," and the painting represents a rocky shore view.

A successful trial of the electric lighting system being placed in the Boston and Albany cars by C. M. Wilder, '86, was made January 14th. A car on one of the circuit trains was lighted, and the light proved highly satisfactory.

Mr. James T. Greeley, '88, has been confined to his home by sickness since the Christmas Holidays. This has been most unfortunate for him, as he was obliged to be absent during the recent examinations.

A Boston school-teacher—an old maid—told an Institute Freshman that she was afraid of electric lights, because they might burst. She is the same one who says she likes Freshmen better than men.

For the first time in several years there are in the Senior Class one or more candidates for degrees in each course. The prospects are that each course will be represented on the list of graduates this year.

Notwithstanding the examinations, many students attended the last meeting of the Society of Arts, and heard the interesting paper on the

"Evolution of the Modern Yacht," by Mr. Edward Burgess, designer of the Puritan and the Mayflower.

President Walker delivered a very interesting lecture on "Socialism" to the Sophomores, just before the semi-annuals. There are many students in the other classes who would like to have an opportunity to hear the President on such an interesting subject.

Mr. Stewart M. Buck, a student of the Institute with Prof. Richards' class, will lecture during this term to the third-year miners, on coal-mining. Mr. Buck has had a great deal of practical experience in coal-mining, and is considered an expert on the subject. This will be his first experience as a lecturer.

The Faculty is revising the list of studies in the General Course, with the intention of making that course one of the most important in the Institute. The course will offer a broad range of studies, with economic studies as an important feature. It will be a very attractive course, and promises to be very popular.

The Institute corporation has petitioned the State Legislature for an appropriation of two hundred thousand dollars. The Institute is in great need of endowments. Two thirds of its expenses are met through tuition fees, while few institutions in this country derive as much as one half their income from the students' fees.

A second-year architect made an arrangement with his father by which he was to receive five dollars for every honor, two dollars for every credit, and one dollar for every pass, and was to pay one dollar for every failure that he received on the semi-annual examinations. They say that when the report came in, he found that he was exactly two dollars in debt.

Mentions in the architectural department for the last problem were given out as follows: Fourth year, design for a lighthouse, Kimball, 1st, Gay, 2d; sketch of a mantel, Kimball received the only mention; third year, sketch of a tower, 1st, Bigelow, 2d, Bosworth, Hall, Packard, Moore, and Meade; design for a city

house, 1st, Bigelow, 2d, Bates, Fuller, and Packard. The work of Mr. Bigelow, who received both first mentions in the third year, was praised very highly by the judges, one of whom said that it was work of which any Boston architect would be proud.

[The following was received just too late for publication in the last number of THE TECH. Although a little late now, we think it too good to be thrown into the waste-basket, and so have published it.]

A Freshman's Ditty.

Air, "She's a very pretty Maiden."

I.

Now it's over,—drill and dancing,—
'go turns him once again
To his "boning" for the Semies,
With a feeling 'kin to pain.
But in vain he seeks oblivion
In "conclusions" "true" and "false";
And he worries "terms disjunctive"
To the tune of that last waltz.

II.

And he tries a spell at drawing
On a "prob." that's Faunce's pride;
But the T-square slips from under,
In a sort of polka-glide.
When he turns to conjugation,
There new troubles make him grieve,—
For he finds himself repeating,
"*Aimer, aimer; c'est à vivre!*"

III.

And at last, when, fagged and weary
Both in body and in mind,
He hies him to his little cot,
In slumber rest to find;
Then with music still a-ringing
In his ears, he nestles down;
And he dreams he still is waltzing
With that girl from out of town.

IV.

But he takes it philosophic,
And he goes his freshman way;
For he knows there'll be another
In the blooming month of May.
And he hangs his battered dance-card
On the gas-jet, by its string,
And, in fancy, tells the maiden
That he'll meet her "in the spring."

— *Carl Ernst.*

Co-Operative Society.

TEXT and reference books will be sold by the Society in their Book Exchange, at the store of Messrs. Cox, on Clarendon Street, according to the following schedule.

It may seem at first sight that the percentage of their first cost, which is allowed, is rather larger than that usually paid for second-hand books; but it must be remembered that many of them are professional in their nature, and are therefore worth more to the student than books of a more general kind. Many of the students have been in the habit of keeping their books for reference in their after work, and therefore it is the opinion of the Directors that the Exchange may be made a success only by offering generous prices to the seller. At the same time, books may be obtained by the buyer at a considerable reduction. Only books which are in good order will be received. If any book used at the Institute has been omitted, it may be deposited in the Exchange at the owner's price. The numbers prefixed refer to the class in which the book is used:—

CLASS.	SUBJECT.
3.	<i>Applied Mechanics.</i> Lanza's Applied Mechanics, \$2.65
2.	<i>Architecture.</i> Clark's Building Superintendence, 1.40
	<i>Architectural His.</i> Ferguson's
2.	<i>Biology.</i> Genl. Biol., Sedgwick and Wilson . 1.05
3.	Huxley and Martin's Practical Biol. 1.00
3.	Wildershun's Comparative Biol. 1.75
3.	Foster and Balfour's Embryology of the Chick, 1.35
1.	<i>Chemistry.</i> Elliot and Storer's Manual65
2-3.	Fresenius' Quantitative Analysis 3.00
2-3.	Wills' Tables for Qualitative Analysis
2-3.	<i>Civil Eng.</i> Trautwine's R. R. Curves 1.45
4.	Strains in Framed Structures 2.65
2.	Trautwine's Engineer's Pocket Bks. 2.80
2.	Johnson's Surveying 1.90
2.	<i>Descriptive Geom.</i> Faunce's Des. Geom.65
1.	<i>Drawing.</i> Warren's Projection's60
3.	<i>Electricity.</i> Jenkin's Electricity85
3.	Cummings, Theory of 1.60
3.	Kemp's Handbook of Testing 2.80
4.	Prescott's Telegraph 2.75
4.	Prescott's Telephone 2.10
4.	Thompson's Dynamo 3.00
4.	Monroe and Jamieson's Pocket Bk. 1.65
	<i>English Lit.</i>
1.	<i>French.</i> Luquien's Popular Science 1.00
2.	Blouet's Composition50

CLASS.	SUBJECT.
3.	<i>Geology.</i> Compend of, Le Comptre \$.65
2.	<i>German.</i> Otis' Grammar45
2.	Boisen's Prose Reader60
4.	Whitney's Grammar65
4.	Whitney's Wilhelm Tell30
4.	Faust35
4.	Minna von Bunhelm40
4.	<i>Heat and Ventilation.</i> Balling's85
3.	<i>History.</i> Fisher's Outlines of
4.	<i>Machine Drawing.</i> Unwin's 1.25
1.	<i>Mathematics.</i> Wells' University Algebra85
	S. M. Arts, Wells' Academic Algebra65
	S. M. Arts, Wentworth's Geometry75
1.	Chauvenet's Geometry80
1.	Wells' Trigonometry70
	Newcomb's 5 Place Tables85
2.	Runkle's Analit. Geom. (unbound)55
2.	Taylor's Calculus 1.25
2.	<i>Mechanism.</i> Schwamb's Notes (if bound at own- er's price) 1.25
3.	Shop Machinery (Cutting Tools)70
3.	Mill Machinery (Cotton Spinning) 1.40
2.	<i>Mineralogy.</i> Dana's 1.75
2.	Determinatives of, Brush 1.75
2.	Crosby's Tables85
3.	<i>Mechanical Eng.</i> Richard's Indicator 1.85
3.	Anchincloss Link and Slide Valve 1.75
3.	Steam and Steam Engines 2.75
3.	Steam Boilers 1.30
4.	Hydrodynamics, Bouser 1.50
4.	Steam Using, Smith 1.75
4.	Marine Engineering 3 50
	Hydraulic Motors 2.75
4.	Locomotivkan Hausinger von Waldegg (un- bound) 10.00
	(Bound at owner's price.)
4.	Clark's Building 1.40
	<i>Physics.</i> S. M. Arts. Stewart's Elementary60
2.	Ganot's 2.25
2.	Daniell's 2.00
2.	Cross' Notes (unbound)50
	(Bound at owner's price.)
3.	Holman's Lab. Notes (unbound)65
	(Bound at owner's price.)
4.	<i>Physiology.</i> Foster's 3.15
4.	Martin's Human Body 1.60
4.	Scharfer's Essentials Histology 1.25
4.	Quain's Anatomy, 2 vols. 6 75
4.	Sewall's Notes70
2.	<i>Political Economy.</i> Walker's Briefer Series75
2.	<i>Railroads.</i> Trautwine's Curves 1.45
4.	Car Builders' Dictionary 1.65
	<i>Surveying (See Civil Eng.)</i>

*Drawing Apparatus, Instruments, etc., as sold at the
Supply Room:—*

Set No. 1.	Instruments	12.00
Set No. 2.	Instruments	9.00
Board Half Imperial65

Drawing Apparatus, etc.—Continued.

Triangular Boxwood Scale	\$1.00
T Square20
Irregular Curves30
Triangles, 45° 4" .20; 8" .35.	
60° and 30° 5" .15; 10" .35.	

The above are all the drawing goods that will be received.

THE COLLEGE WORLD.

HARVARD.—\$400,000 bequeathed to the university by the late J. Q. A. Williams.—The Hasty Pudding Club is to build a new clubhouse, to cost \$25,000.—Edward Burgess has lectured to the freshmen on yachts.—Prof. C. L. Smith will preside during Pres. Eliot's absence abroad.—The Varsity eleven will lose five men with the graduating class.—The *Advocate* is to publish a new collection of its verses.—The freshmen have decided to row the Yale freshmen on the Charles, or not at all.

YALE.—Bremner, of last year's base-ball nine, is a student at the Harvard Law School.—The *Courant* has awarded prizes for contributions.—During the past twenty-four years but seven students have graduated from the Agricultural course at the Sheffield Scientific School, at a cost to the State of \$25,000.—The play "Tangled Lives" was written by a Yale '79 man.—The catalogue shows an increase of 58 students over last year.—The Toboggan Club numbers 250 members.—Mott Haven team in training.

UNIVERSITY OF PENN.—The Scientific Society has completed the formation of a book exchange, which was suggested by the *Pennsylvanian*. The Scientific Society is about seventeen laps ahead of the college authorities (*Pennsylvanian*). How about the Tech's Co-op?—Ancient custom of bowl fight to be prohibited after this year by the Athletic Association, on the ground that it is too dangerous.

UNIVERSITY OF MICHIGAN.—First college to introduce co-education in this country. Has turned out 20 college presidents, and 74 college professors.—Seniors took eight hours to elect a

class orator, and were unable to come to a decision.

AMHERST.—Co-operative store to be started.—Students Senate operating very successfully.—Trustees recommend that number of students be limited to 300.—The *Olio* has appeared, and is very original and complete.

WILLIAMS.—Has received \$10,000 for a new recitation-hall.—Belden elected captain of next year's foot-ball team.—Williams and Tufts will have a foot-ball league all by themselves next season.

BROWN.—Crew and base-ball team in training at Providence gymnasium. Students petitioning for a college gym.

DARTMOUTH.—A dramatic association has been started, with a capital of \$600, divided into shares of \$5 each.—First college paper in America was the *Dartmouth Gazette*, of which Daniel Webster was an editor.

IN GENERAL.—A Hare and Hounds Club is being formed at Cornell.—A Maine Intercollegiate foot-ball league is being agitated by Bowdoin.—The N. E. Inter-Collegiate Athletic Association will hold a meeting at Hartford in May.—Citizens of Germany who reach a certain state of advancement in knowledge, are excused from two years of the otherwise necessary three years' military training. Perhaps this is on the ground that they have so ruined their health by such study, as not to be able to stand three years' hard service.—At the University of Mississippi the male students have petitioned to have the female students removed.—The German Government opposes co-education, and will not allow any woman to be a student at any German University.—It is the custom at the English Universities to rest a whole day before the examinations.—Jonas G. Clark, of Worcester, Mass., a wealthy and public-spirited citizen, has given \$1,000,000 to the city to be used for the foundation of a University, to be called after its founder.—The geological and mineralogical cabinets at Amherst are said to be the finest in the country.



"Perplexity must be the father of profanity," thought the junior who missed an appointment, as he racked his brain for an explanation to write his father.— *Yale Record*.

Mrs. Spriggins thinks that a certain young lady of her acquaintance has no sense of proprietorship, because when the funeral was passing she had her sleigh driven right through the center of the corsage.— *Life*.

In the light of recent events, the old chestnut that "Britannia rules the wave," seems a trifle idiyachtic.— *Life*.

A Question of Time—"Quelle heure est-il?"— *Puck*.

"Did you ever try a toboggan?" asked Tom Reed of the Hon. Frank Lawler.

"No," replied Frank, scornfully. "I don't believe in them fancy drinks. I always take mine plain and old-fashioned."— *Washington Critic*.

BOUND TO HAVE THE DOLL.—A very little miss was busy yesterday amusing herself with her doll, when she was observed to pause suddenly, and think intently for a moment. Then, turning to her mother, she said: "Mamma, when I die, can I take my dollie to heaven?" "No, my child; they don't have dolls in heaven." Whereupon the little one indignantly exclaimed: "Den I'll take my dollie to hell, and play by de fire."— *Buffalo Courier*.

"Here, waiter, what kind of water is this?" said a guest at a country hotel down South. "Dat's spring water, sah," replied the waiter politely. "Oh! is it? Well, bring me some winter water. This is warm enough to wash a shirt in."— *Washington Critic*.

The Koran says there is a devil in every berry of the grape.

Get thee behind me, Sauterne.— *Life*.

"AND THE ACE WILL TAKE THEM ALL."

Before her kneels the amorous youth,
And uses all his arts.

Says he to her, "In very truth
I'll love you ever, for in sooth
You are the Queen of Hearts."

Blushing, she hesitates awhile,
Well skilled in all these arts;
Then, with the best of artless guile,
She answers with a charming smile,
"You are the King of Hearts."

In comes her father, stern and cold,
And the fond lovers parts;
"Young man, your nerve is quite untold;
Begone, for know, oh, lover bold,
That I'm the Ace of Hearts."

— *Yale Record*.

THE BARBER'S RESOLVE.

I'll shave this year in silence,
In silence I'll shampoo;
Without a word I'll cut men's hair,
And trim their whiskers, too.

I'll force no tonic on him
Who my skilled razor tries;
A model shaver I shall be—
Hurrah for the next that dyes!

— *Puck*.

PALMISTRY.

She traced, with dainty finger,
Upon his open palm,
A fortune of riches and honor
Without one touch of harm.
The line of his life was long,
There was intellect, too, she said;
But when she broke at the line of heart,
She gravely shook her head.

"A serious matter already;
And you not twenty-four?
Why, not a vestige of heart remains;
Such lines I never saw!"

He bent his head and whispered,
"I'll explain that if I may:
I've not a vestige of heart, because
You've stolen my heart away."

— *Life*.

Oliver Wendell Holmes got mad at his breakfast-table the other day. He opened a Western paper that had been sent to him, and read that "A young man, named Holmes, has been turning out some very pretty verses in Boston recently; and we hope to give our readers the pleasure of perusing some of his work in the near future."— *Puck*.

RICHMOND STRAIGHT-CUT

... **Cigarettes** ...

Cigarette Smokers who are willing to pay a little more than the price charged for the ordinary trade Cigarettes will find these Cigarettes far superior to all others, being made from the brightest and highest cost gold-leaf tobacco grown. Beware of imitations and observe that signature of undersigned appears on every package.

ALLEN & GINTER, Manufacturers, RICHMOND, VA.

Also Manufacturers of VIRGINIA BRIGHTS, OPERA PUFFS, Etc., CIGARETTES.

DRESS SHIRTS,

For Weddings, for Receptions, for Dinner Parties, with Collars, Cuffs, and Cravats, in the latest English styles.

Plain French Bosoms,

Fine Spots, Plaits and Cords.

Jurors' award for beauty of workmanship and design, and distinguished excellence in the manufacture of shirts.

NOYES BROS.,

Washington and Summer Streets,
BOSTON, U. S. A.

BLANKET WRAPS

For Men, Women, and Children, for the House the Bath, or the Sick-Room. Those having occasion to be up nights will find them indispensable.
\$3.75 to \$75.00.

Lambs' Wool Abdominal Bands, a positive cure for all Bowel Troubles, Ladies' and Men's, at Noyes Bros.'

Underwear and Hosiery in Pure Silk, Lambs' Wool, Merino, Balbriggan, and English Cotton, for early fall wear, at Noyes Bros.'

English Flannel Pajamas, Long Flannel Night Shirts and Wraps, for steamer and railway traveling, at Noyes Bros.'

Dress Shirts, with the New French Cords, Spots, and Fine Plaited Bosoms, elegantly made by Messrs. Noyes Bros.'

English Mackintosh Coats for Ladies and Gentlemen, at Noyes Bros.'

— ENGLISH —

DRESSING GOWNS, JACKETS, AND WRAPS.

English Cheviots,

ENGLISH AND FRENCH FLANNELS,

Silk and Wool, and Pure Silk Shirtings,

For Lawn Tennis, for Steamer Traveling, for Hunting and Fishing, for Railway and Yachting, always in stock or made to special measure.

ENGLISH NECKWEAR.

London Tan Street Gloves, warranted, \$1.35.

NOYES BROS.,

Washington and Summer Streets,
BOSTON, U. S. A.



Fine Pottery, Glass, and Lamps.

THE subscribers invite attention to their stock of the above branches, which we dare say is not excelled on this continent. One of our firm visits the Potteries of England, France, Germany, China, and Japan, seeking the best products from original sources. We have also specimens from the best home manufacturers, comprising desirable exhibits of useful and ornamental wares, to which WE INVITE INSPECTION. Six floors, wholesale and retail.

JONES, McDUFFEE & STRATTON,
120 Franklin Street, corner Federal.

N. B. — Our exhibit of Lamps, Bed-room Sets, Smokers' Sets, and choice Gems in Cut Glass and China for Wedding Gifts, is extraordinary. From the old Wedgwood Pottery we have Plaques, Plates, Mugs, Jugs, Tiles, and Coffee, decorated (under glaze) with Boston scenes (including cut of the Tech Institute), which may be found desirable as souvenirs.

STUDENTS' SUPPLIES.

A FULL LINE OF

Mathematical Goods, Blank Books, Figuring Blocks, Stylographic Pens, etc., and all varieties of Drawing Papers.

Also, the LATEST NOVELTIES in

CHOCOLATES, BON-BONS, and GLACÉ FRUITS.

C. M. & J. W. COX,

Wholesale and Retail Dealers in

Artists' Materials and Fine Stationery,

214 CLARENDON STREET, BOSTON, MASS.

Menus and Orders for Class Suppers and Dances.

HENRY H. TUTTLE & CO.

Would call the attention of Students
to their stock of

Seasonable Foot Wear,

NEW AND NOVEL STYLES,

Some of which are *exclusive with us.*

Prices as low as consistent with
good stock and workmanship.

435 Washington Street,

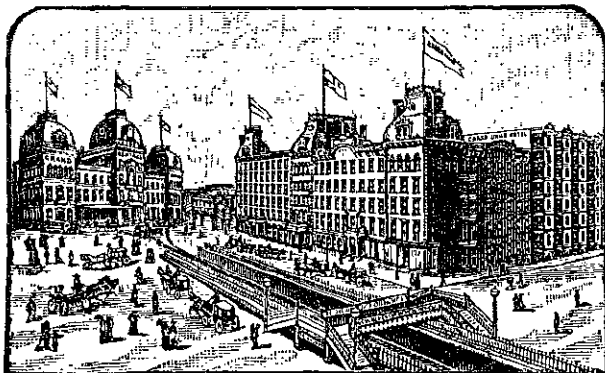
BOSTON.

GRAND UNION HOTEL, NEW YORK CITY.

OPPOSITE GRAND CENTRAL DEPOT.

GUESTS' BAGGAGE TO AND FROM
GRAND CENTRAL DEPOT FREE.

Over 600 handsomely furnished
rooms at \$1.00 per day and upward.
European Plan.



FIRST-CLASS Restaurant, Dining-Rooms, Café, and Lunch Counter, *a la carte*, at moderate prices. Travelers can live well at the

GRAND UNION

for less money than at any other first-class hotel in New York.

W. D. GARRISON,
Manager.

For Pipe Smoking

Any of ALLEN & GINTER'S TOBACCOS will give satisfaction. The well-known "Richmond Gem," and their new brand, "Dirie Chop Cut," are highly recommended.

NEW ART GALLERIES

79—BOYLSTON ST.—79

WILLIAMS & EVERETT

INVITE ATTENTION TO THEIR EXTENSIVE AND
CAREFULLY SELECTED STOCK OF

PAINTINGS,

FINE ETCHINGS,

RARE ENGRAVINGS, CARBONS,
PHOTOGRAPHS, ETC., ETC.

SPECIAL ATTENTION TO ARTISTIC FRAMING.
OLD PICTURES RESTORED. OLD FRAMES RE-GILT.

79 BOYLSTON ST., BOSTON.

AGENTS FOR ROGERS' GROUPS.



PORTRAIT ARTIST.

PHOTOGRAPHER TO THE CLASS OF '87.

ALL UNDERGRADUATE STUDENTS MAY HAVE
PICTURES AT GREATLY REDUCED PRICES.

A. N. HARDY,

493 Washington Street, Boston.

RAYMOND & FOX,

179 TREMONT STREET,

Importers, Jobbers, and Retailers of Fine Cigars.

"He who doth not smoke hath either known no griefs, or refuseth himself the softest consolation
next to that which comes from Heaven."—*Sir Bulwer Lytton.*

Our assortment is at all times complete in Popular Brands.

Our importations are regular, and in such quantities as enable us
at all times to offer to our customers fresh goods.

RAYMOND & FOX.

Thorndike Hair-Dressing Rooms.

A. S. SCHUTZ, Proprietor.

SIX SHAVES FOR NINETY CENTS.

Billiard-Room Connected.

BOSTON FOREIGN BOOK-STORE.

CARL SCHOENHOF

144 TREMONT STREET, BOSTON.

AMATEUR PHOTO-OUTFITS.

DISCOUNT TO STUDENTS.

Send for lists to

CHANNING R. SELEE,
56 Bromfield Street, Boston.

TOOL DEPOT.

CALL AND EXAMINE THE LARGEST ASSORTMENT

—OF—

MACHINISTS' TOOLS

AND SUPPLIES

To be found in New England.

A. J. WILKINSON & CO.

184 and 188 Washington Street, Boston, Mass.

WALTER C. BROOKS & CO.

TAILORS

6 UNION STREET, - - - - BOSTON.

Stock selected Particularly for Young Men's Wear.

GERLACH & STEUER

(Formerly Jacob Gerlach),

Ladies' and Gents' Hair Cutting.

54 TEMPLE PLACE,
BOSTON.

Manufacturer of Ventilating or
Gossamer wigs and toupees.

Ladies' Hair Work of every variety. Children's Hair cut in the
neatest style.



TRADE MARK.

Black Stockings

Money refunded if they stain the
feet. Every pair stamped with
our warrant.

THE F. P. ROBINSON CO.,

49 West Street, Boston.

FALL RIVER LINE TO NEW YORK

HOW ABOUT THAT

H

NOW, EH?

FALL RIVER LINE TO NEW YORK

D. TOY,

* TAILOR *

-11-

Charles Street,

NEAR BEACON ST.

A large Stock of Foreign and
Domestic Goods always on hand.

Agent for Winchester, Son, &
Flowers, 17 Maddox Street, and
Whitaker & Co., 43 Conduit Street,
London, W

THE ASSOCIATION GYMNASIUM,

Corner Boylston and Berkeley Streets.

R. J. ROBERTS, Superintendent.

H. L. CHADWICK, Assistant Superintendent.
L. F. SMALL, Clerk.

CORPS OF COMPETENT VOLUNTEER INSTRUCTORS.

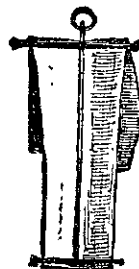
Classes Morning, Afternoon, and Evening.

Special Attention to Members not in Classes.

The newest and most complete Gymnasium in regard to
Apparatus and all other appointments.

Terms, including Box, Measurements, Personal and Class Instruction,
\$8.00 per year; for three months, \$5.00.

Young men purposing to join a Gymnasium are invited to inspect
this Gymnasium thoroughly.



London Trouser-Stretcher.

Takes bagging out of knees and restores
pantaloon to original shape. Price,
\$2.50. AGENTS WANTED. Send
for Circular. The best Present you can
make to any gentleman. Sole Wholesale
Agents in the United States,

G. W. SIMMONS & CO.,

32 North Street, Boston, Mass.

BRUNSWICK HAIR-DRESSING ROOMS

ROBERT LINK, Proprietor.

Six Shaving Tickets for \$1.00.

DAVID MYERS,
TAILOR
175 Tremont St.

*I have a Large and Well-Selected
Stock of ENGLISH CLOTHS for*

BUSINESS SUITS,
DRESS SUITS,
FANCY WAISTCOATS,
TROUSERS, and
OVERCOATS.

Special Prices to Students.

THE
BRUNSWICK

BOSTON'S
Grandest Hotel

BARNES & DUNKLEE,
Proprietors.



NEAR the Public
Garden, Common,
and Public Library,
Museum of Fine Arts,
New Old South, Trin-
ity (Phillips Brooks's)
Church, and OPPO-
SITE INSTITUTE of
TECHNOLOGY.

Beacon, Dartmouth
Street, and Hunting-
ton Avenue, and all
Back Bay Cars, pass
the Hotel for either
up or down town,
every three minutes.

Latest Goods! Finest Work!
Special Prices to Students!

MESSINGER BROS. & JONES,
Tailors and Importers,

388 WASHINGTON STREET, BOSTON.

LUX ENGRAVING CO.

OFFICE, 31 EXCHANGE ST., BOSTON.

Designing and **E**ngraving

of every description, for Schools and Colleges, by our new Photo-
Engraving method, and on Wood.

STYLISH NECKWEAR,
COLLARS AND CUFFS FOR YOUNG MEN.

F. W. SEAVEY. - - - - 53 WEST STREET.

C. H. CODMAN & CO.

Manufacturers and Wholesale Dealers in every variety of

Photographers' Materials, Dry-Plate Amateur Outfits.

Sole Agents for the New Ortho-
panatic Lens.

34 Bromfield St., Boston, Mass.

Frank Wood,

Printer,

352 Washington Street, Boston.

JOSEPH GILLOTT'S
Steel Pens

JOSEPH GILLOTT & SONS, 91 John Street, New York, HENRY HOE, Sole Agent.

FOR ARTISTIC USE in fine drawing,
Nos. 659 (the celebrated Crowquill), 190 and 291.
FOR FINE WRITING. Nos. 1, and 303 and Ladies', 170.
FOR BROAD WRITING,
Nos. 294, 352 and Stub Point, 249.
FOR GENERAL WRITING, Nos. 332, 404, 390 and 604.
Sold by ALL DEALERS throughout the World.
GOLD MEDAL PARIS EXPOSITION, 1878.

PREPARATION for the INSTITUTE of TECHNOLOGY,
and for HARVARD COLLEGE without Greek,

Private School, 18 Boylston Pl., Boston.

ALBERT HALE.

* PAPER *

For Writing—
Bond, Standard, Parchment,
Cambrie, Crinoline, Mummy Cloth,
WHITING'S.
For Drawing—
Profile, Detail, Tracing, Manilla,
Blue Process, Co-ordinate,
WHATMAN'S.

Circulars upon application for Collections of Minerals, and
Tables How to Determine Them.

C. E. RIDLER, (Stationery, Drawing-Materials, Etc.)
Corner Boylston and Berkeley Sts., Boston.

PRIVATE SCHOOL FOR BOYS,

165 Tremont Street, Boston.

Preparation for College, INSTITUTE OF TECHNOLOGY, and
Business. Thorough instruction given in Elementary
English Studies.

Native French and German Teachers.

LEROY Z. COLLINS.

JOHN EARLE & CO.,

Tailors to the Co-operative Society,

330 WASHINGTON ST., BOSTON.

Dress Suits loaned for occasions.

Note Books and Students' Supplies,

At lowest possible prices.

FRED W. BARRY,

108 and 110 Washington Street, Boston

Corner of Elm Street

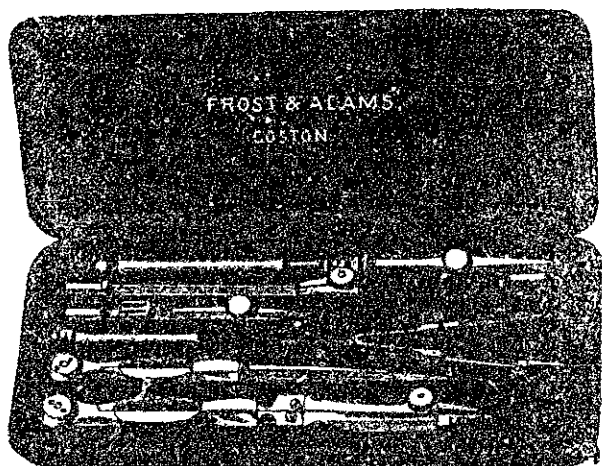
B. W. CURRIER & CO.,

DEALERS IN

Fine Ready-made Clothing

395 WASHINGTON STREET, BOSTON.

F. E. WELLS, Manager.



FROST & ADAMS,

IMPORTERS OF

Drawing Instruments

AND

Supplies for Students, Architects, and Engineers.

Designers' Colors a Specialty.

SEND FOR ILLUSTRATED CATALOGUE.

No. 37 Cornhill, - - - BOSTON.

J. C. LITTLEFIELD,

Chambers,

➤ FINE TAILORING ◀

2A Beacon St.

The Latest Novelties of the Season.

DRESS SUITS A SPECIALTY.

HARRINGTON

JOHN R. FARRELL,

↔ TAILOR ↔

No. 14 Boylston Hall, Boston, Mass.

Finest line of Foreign and Domestic Fabrics constantly on hand, to be made in the best styles, at reasonable prices.

MILITARY SCHOOL JACKETS, CHEVRONS, and UNIFORMS.